Designation: D6542 – 05 (Reapproved 2018)

# Standard Practice for Tonnage Calculation of Coal in a Stockpile [1]

This standard is issued under the fixed designation D6542; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This practice is used to calculate the mass (commonly expressed in tons) of coal in a storage pile using the volume of the stockpile by Test Method D6172 and the density of the coal determined by Test Method D6347/D6347M.

1.2 This practice is applicable to all ranks of coal.

1.3 The user of this standard determines when the density values provided by the survey require an adjustment for moisture.

1.4 The values stated in either inch-pounds or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems can result in nonconformance with the specification.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

2.1 *ASTM Standards:*[2]

D121 Terminology of Coal and Coke

D2013 Practice for Preparing Coal Samples for Analysis

D3173 Test Method for Moisture in the Analysis Sample of Coal and Coke

D3302 Test Method for Total Moisture in Coal

D6172 Test Method for Determining the Volume of Bulk Materials Using Contours or Cross Sections Created by Direct Operator Compilation Using Photogrammetric Procedures

D6347/D6347M Test Method for Determination of Bulk Density of Coal Using Nuclear Backscatter Depth Density Methods

## 3. Terminology

3.1 *Definitions*—There are no terms in this practice that require new or other than dictionary definitions. Many terms in this practice may be found in Terminology D121.

## 4. Significance and Use

4.1 The physical inventory of tons of coal in a stockpile, as calculated by this practice, may be used for accounting and tax purposes.

4.2 The inventory results may be compared to other estimates of the inventory, such as:

4.2.1 Tons from a previous inventory less tons shipped or consumed.

4.2.2 Tons estimated to have been received (from conveyor, rail, or truck weights) less tons shipped or consumed.

## 5. Procedure

5.1 Determine if the reported tonnage should be on an as-determined basis, or some other moisture adjusted basis. If the moisture content was determined on the density-measurement samples (see Test Method D6347/D6347M), then the density data (and the tonnage) can be calculated to a dry basis or to another moisture-containing basis.

5.1.1 Use Eq 1 or Eq 2 to adjust the as-determined density to a different moisture basis. The percent moisture determined in accordance with Test Methods D3173, D3302, or D2013 in the samples collected according Test Method D6347/D6347M is used in Eq 1 or Eq 2.

5.1.2 Use Eq 1 to adjust the average density values to a dry basis:

$$D_{dry} = D_{det} \times \left(1 - \frac{M_{det}}{100}\right) \quad (1)$$

[1] This practice is under the jurisdiction of ASTM Committee D05 on Coal and Coke and is the direct responsibility of Subcommittee D05.07 on Physical Characteristics of Coal.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.